CURRICULUM VITAE: Bo Yan

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Personal Data

Date of Birth	August 7, 1967, China
Marital Status	Married with two children

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Education

Ph.D	Beijing University, China, Chemistry, July 1995. Thesis: Monte Carlo simulation of adsorption and separation of nitrogen and oxygen on zeolites and programming of several structure databases.
M.S.	Nankai University, China, Chemistry, June 1992. Thesis: Computer-assisted design of pesticides
B.S.	Nankai University, China, Chemistry, July 1989.

Work experience

4/98 – Present	Postdoctoral fellow with Dr. Yi-der Chen in Biophysics at the Mathematical Research Branch, National Institute of Diabetes, Digestive & Kidney Diseases, National Institutes of Health
7/97 – 4/98	Associate Professor, Chemistry School, Shandong University, China
7/95 – 7/97	Assistant Professor, Chemistry School, Shandong University, China
9/91 – 7/92	Programming assistant engineer, Central Laboratory, Nankai University, China

Research experience

1. Monte Carlo simulations and mathematical modeling of regulatory mechanisms of skeletal muscle and smooth muscle (1998-)
2. Formalism and Monte Carlo simulations of kinesin motor motility (1999-)
3. Molecular dynamics simulations of nucleotide-dependent kinesins in solution (1999-)
4. Biased Brownian motion on random ratchets (1998-2001)
5. Molecular mechanics study of recognition of chiral organic compounds (1995-1998)
6. Monte Carlo simulations of air adsorption and separation on zeolites (1992-1995)
7. Construction of structure databases (1992-1995)
8. Computer-assisted design of pesticides (1989-1992)

Teaching experience

1. Instructor of "Computational Chemistry" for senior undergraduate students (1995-1998)
2. Advisor to undergraduate students

Honours and awards

1. Passed the exam 1-- Mathematical Foundation of Actuarial Science at the highest scores of 10 in the Fall 2001. This course was co-sponsored by the Casualty Actuarial Society (CAS) and the Society of Actuaries (SOA).
2. NIH Fellows Award for Research Excellence in 2000 (NIH)
3. Excellent Academic Performance Award in 1994 (Beijing University)
4. Excellent Master Degree Thesis Award in 1992 (Nankai University)
5. Wang Ke-chang Scholarships in 1990, 1991 (Nankai University)

Membership

1. Member of Biophysical Society (1999-)
2. Member of the Society for Industrial and Applied Mathematics (2000-)

Computer skills

1. Programming languages: More than 12 years of experience programming in C; more than 5 years of experience programming in C++; working knowledge of Fortran, visual C++ & Basic and Pascal.
2. Platforms: Windows 9X&NT/DOS, SGI, UNIX.
3. Software: Extensive experience in Insight II, Mathematica; Working knowledge of Cerius2, Charmm and Quanta.
4. WWW: More than 2 years of experience in HTML

Publications

1. Yan, B., Lai, C.M., Lin, S.F. and Li, Z.M. (1992) Using molecular graphics, molecular mechanics, quantum chemistry and electrostatic potential methods to study structure-property relationship on pesticides (III)----A simple method for obtaining optimum conformation of organic molecule. *Chemical Journal of Chinese Universities* 13, 1555-1957.

2. Yan, B., Lai, C.M., Lin, S.F., Zhang, Y.H. and Chen, R.Y. (1993) Studies on reaction mechanism of α-aminoalkyl phosphonate ester and N-chloroacetyl glycine ethyl ester. *Chemical Journal of Chinese Universities* 14, 200-203.

3. Yan, B., Lai, C.M., Lin, S.F. and Li, Z.M. (1993) Using molecular graphics, molecular mechanics, quantum chemistry and electrostatic potential methods to study structure--property relationship on pesticides (IV)----Study on characteristics of conformations of sulfonylureas herbicides by MMX and conformation--superimposition method. *Chemical Journal of Chinese Universities* 14, 1534-1537.

4. Yang, G.S., Yan, B., Gao, R.Y., Shen, H.X. and Wang, Q.S. (1998) Study of enantiomers of amino acid derivatives on CSPs by high performance liquid chromatography. *Journal of Shandong University* (Nature Science Edition) 33, 110-114.

5. Chen, Y.D., Yan, B., and Miura, R. (1999) Asymmetry and direction reversal in fluctuation-induced biased Brownian motion. *Physical Review E* 60, 3771-3775.

6. Yang, G.S., Yan, B., Lei, L., Wang, W.G. and Liu, C.B. (2000) Study of chiral discrimination of diniconazole by molecular mechanics. *Chemical Journal of Chinese Universities* 21, 1745-1747.

7. Yan, B., Miura, R. and Chen, Y.D. (2001) Direction reversal of fluctuation-induced biased Brownian motion on distorted ratchets. *Journal of Theoretical Biology* 210, 141-150.

8. Chen, Y.D., Yan, B., Chalovich, J.M. and Brenner, B. (2001) Theoretical kinetic studies of models for binding myosin subfragment-1 to regulated actin: Hill model versus Geeves model. *Biophysical Journal* 80, 2338-2349.

9. Sen, A., Chen, Y.D., Yan, B. and Chalovich, J.M. (2001) Caldesmon reduces the apparent rate of binding of myosin S1 to actin-tropomyosin. *Biochemistry* 40, 5757-5764.

10. Chen, Y.D., Yan, B. (2001) Theoretical formalism for bead movement powered by single two-headed motors in a motility assay. *Biophysical Chemistry* 91, 79-91.

11. Chalovich, J.M., Yan, B., Brenner, B. and Chen, Y.D. (2002) Response to the letter by Geeves and Lehrer--Modeling thin filament cooperativity. *Biophysical Journal* 82, 1679-1681.

12. Chen Y.D., Yan, B. and Rubin, R. (2002) Fluctuations and randomness of the bead powered by a single kinesin molecule in a force-clamped motility assay: Monte Carlo simulations. *Biophysical Journal* 83, 2360-2369.

13. Yan, B., Sen, A. and Chalovich, J.M. and Chen Y.D. (2003) Theoretical studies on competitive binding of caldesmon and myosin S1 to actin: prediction of apparent cooperativity in equilibrium and slow-down in kinetics of S1 binding by caldesmon. *Biochemistry* in press.

14. Yan, B. and Chen Y.D. Molecular dynamics simulations of nucleotide-dependent kinesin in solution (submitted)

15. Chen, Y.D. and Yan, B. Power stroke and load-dependent mechanochemical cycle of kinesin motors (in preparation).

Conferences

1. Chen, Y.D. and Yan, B. Modeling the motility of kinesin motor. 47th annual meeting of Biophysical Society in San Antonio, Texas, March 1-5, 2003 (platform).

2. Yan, B., Chalovich, J.M. and Chen, Y.D. Theoretical studies on competitive binding

of caldesmon and S1 to actin: Prediction of apparent cooperativity for equilibrium measurements and a reduced rate of S1 binding by caldesmon. 46th annual meeting of Biophysical Society in San Francisco, California, February 23-27, 2002 (poster).

3. Chen, Y.D., Yan, B. and Rubin, R. Monte Carlo studies on kinesin motility: effects of hydrodynamic parameters of the bead on the randomness of the velocity of the motor in a force-clamped motility assay. 46th annual meeting of Biophysical Society in San Francisco, California, February 23-27, 2002 (poster).

4. Chen, Y.D. and Yan, B. Load-dependent kinetic mechanism of mechanical-chemical coupling in kinesin motors. NIH Research Festival 2001, Bethesda, Maryland, October 2-5, 2001 (poster).

5. Yan, B. and Chen, Y.D. Molecular dynamics simulations of nucleotide-dependent kinesin in solution. 45th annual meeting of Biophysical Society, Boston, MA, February 17-21, 2001 (poster).

6. Chen, Y.D. and Yan, B. How are the movements of the kinesin and the bead correlated in a motility assay? 45th annual meeting of Biophysical Society, Boston, MA, February 17-21, 2001 (oral presentation).

7. First conference of Society for Industrial and Applied Mathematics (SIAM) on computational science and engineering, Washington, DC, September 21-24, 2000.

8. Yan, B. and Chen, Y.D. Molecular dynamics simulations of kinesin with three nucleotide states in solution. Fourteenth symposium of Protein Society, San Diego, CA, August 5-9, 2000 (poster).

9. Yan, B., Chen, Y.D. and Miura, R. Asymmetry and direction reversal in fluctuation-induced biased motion of particles in a periodic potential. 44th annual meeting of Biophysical Society, New Orleans, LA, February 12-16, 2000 (poster).

10. Chen, Y.D., Yan, B., Chalovich, J.M. and Brenner, B. A cooperative 2-state model for acto-myosin interactions (Hill et al. PNAS 77, 3186 (1980)) does predict an effect of Ca++ on the kinetics of binding of myosin S1 to regulated actin filaments. 44th annual meeting of Biophysical Society, New Orleans, LA, February 12-16, 2000 (poster).

11. Yan, B., Miura, R.M. and Chen, Y.D. Biased Brownian motion on a fluctuating periodic potential with distorted ratchets. Symposium on nonlinear dynamics in biology an chemistry, University of California, Davis, CA September 3-4, 1999 (poster).

12. Yan, B., Wu, N.Z., and Gui, L.L. Monte Carlo simulation of nitrogen and oxygen adsorption on zeolites. 50th national conference on computational chemistry, Shanghai, November 1995 (oral presentation).

13. Yan, B., Wu, N.Z. and Gui, L.L. Molecular quadruple moment's effect on Nitrogen and Oxygen adsorption on Zeolites. 50th national conference on computational chemistry, Shanghai, November 1995 (poster).

14. Yan, B., Wu, N.Z., and Gui, L.L. Programming of atomic sensitivity factors database. 50th national conference on computational chemistry, Shanghai, November 1995 (poster).

15. Yan, B., Wu, N.Z. and Gui, L.L. Programming of oxides' structure and property database. 50th national conference on computational chemistry, Shanghai, November 1995 (poster).

16. Yan, B., Wu, N.Z. and Gui, L.L. Indexing of ESCA database. 50th national conference on computational chemistry, Shanghai, November 1995 (poster).

References

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